



## DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE AUDIT AGENCY  
NORTON AIR FORCE BASE, CA 92409-6001

18 June 1987

AFAA Area Audit Office/34AG  
Norton AFB CA 92409-5996

Report of Audit 458-7-30, Administration of the Inertial Upper Stage Full Scale Development Contract, Space Division, Los Angeles AFS CA 90009-2960

SD/CC

AFSC/CC

### 1. Introduction.

a. The Inertial Upper Stage (IUS) is a high altitude booster used with either the Space Transportation System (Space Shuttle) or the Titan 34D launch vehicle. The IUS was developed for use by both the Air Force and the National Aeronautics and Space Administration.

b. The IUS Full Scale Development (FSD) Contract (F04701-78-C-0040) was initially awarded in 1978 for \$248.9 million and later expanded to \$827.1 million. In addition, a letter contract (P00141) valued at \$138.6 million was issued in 1980. The FSD contract completed the development and initial operational test of the IUS, delivered IUS vehicles for Shuttle and Titan flights, provided IUS mission support equipment spares, and provided launch services for the Space Shuttle and the Titan 34D.

c. This audit was accomplished as a result of a preliminary survey effort to evaluate mission performance incentives. Although the IUS FSD contract period of performance was scheduled to conclude in November 1986, final contract administration actions were required for contract closeout.

d. Management criteria used in evaluating the IUS FSD contract were contained in:

(1) DOD FAR Supplement Section 15.804-7, Defective Cost or Pricing Data, 25 July 1985.

(2) FAR Section 16.301-1, Cost-Reimbursement Contract Description, 1985.

(3) DOD FAR Supplement Section 17.7400, Contracts with Requirements for Provisioned Items, 5 March 1984.

(4) Air Force FAR Supplement Section 17.9, Undefined Contractual Actions, 25 March 1986.

(5) AFSCM 70-390, Contract and Acquisition, Acquisition Management Information System, 31 July 1985.

### FREEDOM OF INFORMATION ACT

The disclosure/denial authority prescribed in AFR 175-4 will make all decisions relative to the release of this report to the public.

(6) AFSCR 70-13, Acquisition Management Information System, 29 August 1985.

(7) DOD 7640.2, Policy for Followup on Contract Audit Reports, 18 July 1986.

(8) AFSCM, Action 10.1, Contract Changes, DOD - 1986.

These references will be discussed in the TAB attachments to this report.

2. Scope. Our overall objective was to determine whether the IUS FSD contract was adequately administered. Specifically, we determined whether:

a. Contract values and obligation totals accurately reconciled between the contract document (-0040), Air Force Contract Management Division (AFCMD) accounting records, and the contractor's records.

b. Defective pricing actions were properly processed.

c. Unfinalized contractual actions were finalized in a timely manner.

To accomplish these objectives, we reviewed judgmentally selected contract modifications, program documentation, and management actions that occurred from April 1978 to November 1986. This program results review was conducted in accordance with generally accepted government auditing standards and, accordingly, included such tests of internal controls as considered necessary under the circumstances. This review was accomplished from October 1986 through April 1987.

3. Overall Evaluation. Administration of the IUS FSD contract needed management action to facilitate timely closure action and to deobligate funds from the unliquidated balance of \$18 million as of November 1986. Specifically, neither the contract value nor the contract obligation amount reconciled with Air Force or contractor accounting records. Additionally, defective pricing actions were not processed in an accurate or timely manner, and unfinalized contractual actions were not finalized within the required 6-month limitations. Specific findings are summarized below, with detailed findings in the referenced TAB attachments.

a. Contract Values and Obligation Amounts. Air Force and contractor records and reports did not accurately reflect the IUS contract value or obligated amounts. Specifically, contract modification documents contained a net overstatement of \$33.8 million. Additionally, contract obligations varied between the Air Force accounting records by as much as \$20.3 million. (TAB A)

b. Defective Pricing. Defective pricing actions were not processed in an accurate or timely manner. Specifically, deobligation actions for two defective pricing cases, totaling \$3.2 million, were not accomplished although outstanding for several years. (TAB B)


c. Unfinalized Contractual Actions. Procurement actions were not finalized in a timely manner. Specifically, 30 of the 69 change orders

reviewed exceeded criterion for definitization. Additionally, \$1.5 million of provisioned items ordered required an average of 3.4 years to definitize and another \$3.5 million were still undefinitized since 1980. Further, a letter contract valued at \$138.6 million also exceeded the criterion for definitization by over 1 year. (TAB C)

4. Management Comments. The Space Division Chief of Staff concurred with the findings and recommendations presented in the report and stated: "Immediate action was taken to settle the defective pricing case, deobligate the \$2.5 million and implement suspense procedures. All other actions are being settled as stated in the TABs. The IUS Program Manager will review progress of these actions quarterly until completion in March 1988."

5. Evaluation of Management Comments. Management's comments and actions taken (TAB A, paragraph 7a) and planned (TAB A, paragraph 7b and TAB C, paragraph 5) are responsive to the findings and recommendations discussed in this report.

6. Discussion with Responsible Officials. A draft of this report was provided to the Space Division Commander on 24 April 1987. The report was discussed with the Program Director for Upper Stages and the Deputy for Contracting. Management's formal comments were received on 8 June 1987.



EARL J. SCOTT  
Chief, Area Audit Office

5 Atch

1. TAB A
2. TAB B
3. TAB C
4. Schedule 1
5. Schedule 2

cc: AFSC/IGX  
AFSC/IGO  
AFSC/ACX  
AFOSI  
AFAA Rep, AFSC

CONTRACT VALUES AND OBLIGATION AMOUNTSBACKGROUND

1. Air Force Contract Management Division (AFCMD) is the paying station for the Inertial Upper Stage (IUS) Full Scale Development (FSD) contract. The IUS program office provides AFCMD all contract accounting actions and data changes required for updating the AFCMD automated financial system, Acquisition Management Information System (AMIS). The automated system is used by AFCMD to generate a subvoucher for the Accounting and Finance Officer's check payment.
2. The AMIS responds to DOD-directed military standard contract administration procedures and supports the AFCMD contract administration and payment section. Hard copy reports available from AMIS relate directly to reports prepared by defense contractors which show periodic updates of contract values and obligation amounts.
3. AFSC Regulation 70-13, AFSC Acquisition Management Information Systems (AMIS), establishes policies and procedures and assigns responsibilities for developing and operating the automated AMIS.

SCOPE

4. Our objective was to determine whether the contract document and accounting records (AMIS) accurately presented the contract dollar and obligation totals and whether this data reconciled to similar contractor information. To accomplish our review, we judgmentally reviewed 319 (\$429.2 million) of 761 (\$450.7 million) contract modifications impacting the contract value, and all 205 (\$744.29 million) modifications impacting contract obligation amounts.

FINDING

5. Contract Accuracy. Air Force and contractor records and reports did not accurately reflect the IUS contract value or obligated amounts. Specifically, of the contract modification documents reviewed, contract values were overstated by \$33.8 million. In turn, Air Force and contractor reports showed contract value differences of \$43.1 million. Additionally, internal Air Force reports showed obligation variances of \$20.3 million and differed from the contractor's stated obligation total by \$74,516. These differences primarily resulted from inaccurate Air Force records.

a. Contract Value. Contract values were inaccurately recorded on the contract modification documents and the Air Force and contractor accounting reports. The errors were primarily attributed to incorrect contract document preparation. For example, based on a sample of 319 modifications, AMIS keypunch accuracy was 99.4 percent. However, from a detailed review of 88 changes (\$199 million) selected for further analysis, eight overstated the contract value by a net amount of \$33.8 million (See Schedule 1, Causes 2-6). Furthermore, seven (\$333,933) were not accurately recorded on contractor reports (See Schedule 1, Cause 7). As a result, Air Force records showed the

IUS contract valued at \$742.7 million while contractor reports valued the contract at only \$699.6 million, a \$43.1 million difference.

b. Obligation Values. Air Force and contractor obligation reports were not accurate nor did they reconcile. Specifically, AFQMD's Accounting Data Record accurately reflected contract obligations of \$827.12 million. However, AMIS, AFQMD's Historical Report, and the contractor's reports were understated by \$6.8 million, \$20.3 million, and \$74,516, respectively. From review of the 205 contract modifications affecting obligations, the variances were caused by errors and omissions in accounting transactions. For example, within the AFQMD accounting system used to validate payment limitations, obligations of \$34.8 million for seven modifications had been omitted and deobligations of \$14.5 million from another modification was not recorded (Schedule 2). We were unable to determine the cause for the \$74,516 obligation variance between Air Force and contractor records.

These conditions occurred because management's internal control procedures did not require contract management personnel to periodically review and reconcile contract values to AFQMD or contractor accounting records. Additionally, from contract (-0040) inception 8 1/2 years ago, approximately 17 different procurement contracting officers (PCOs) were assigned management responsibility. The PCO turnover impacted program continuity and reduced the visibility on accounting controls. As a result, the current PCO was not fully aware of the contract value and obligation variances associated with the IUS contract (-0040), and administrative personnel were assigned to other pending negotiation efforts.<sup>1</sup> Accurate contract values are necessary for successful closure action, resolution of any discrepancies between the Air Force and the contractor, and deobligation of excessive funds. For example, the contract unliquidated obligation balance was \$18 million, as of November 1986. Additionally, accurate financial contract accounting records prevent over-obligation by the Government or possible overcharging by the contractor.

#### RECOMMENDATIONS

6. The Chief of IUS Contracting should:

a. Recommendation 1. Develop and implement internal control procedures requiring contracts personnel to periodically reconcile the contract document to the AMIS and contractor reports. Differences should be resolved.

b. Recommendation 2. Assign a contract administrator the primary duty to reconcile the contract to Air Force and contractor accounting records, take corrective action, and begin closeout action at the earliest possible date.

---

<sup>1</sup>At the time of the audit, no administrative program office personnel were assigned to review the contract and take necessary corrective actions, although one individual from another program office was assigned on a time available basis.

MANAGEMENT COMMENTS

7. The Space Division Chief of Staff concurred with the finding and recommendations and stated:

a. Recommendation 1. "Concur. Internal control procedures are in effect to preclude problems of this nature in the future. These procedures include computerized funding log maintenance and computer reconciliation of the contract document to the AMIS and contractor reports after each action. Recommend this item be closed." Action was completed by 8 June 1987.

b. Recommendation 2. "Concur. The contractor has been requested to provide funds recapitulations for the entire contract. Concurrent with this action, a contract negotiator has been assigned to reconcile the contract. Upon completion of the above, these records will be reviewed and reconciled actions will be taken to correct the contract. Due to the magnitude of changes (over 800) issued against this contract and shortage of personnel, a completion date of all actions is estimated to be 31 March 1988."

EVALUATION OF MANAGEMENT COMMENTS

8. Management's comments and actions taken (paragraph 7a) and planned (paragraph 7b) are responsive to the finding and recommendations discussed in this TAB.

DEFECTIVE PRICINGBACKGROUND

1. The criteria for defective pricing is contained in DOD FAR Supplement 15.804-7. Normally, defective pricing increases the contract price in the amount of the defect plus related burden and profit or fee. Under price reduction clauses, both disallowed costs and the related burden and profit or fee may be subject to reduction. Policy for Followup on Contract Audit Reports (IG7640.2), 18 July 1986, requires resolution of defective pricing actions within 1 year of identification by the Defense Contract Audit Agency (DCAA).

SCOPE

2. Our objective was to determine whether defective pricing actions were processed in an accurate and timely manner. To accomplish this objective, we reviewed all four defective pricing cases (\$3.5 million) identified by DCAA.

FINDING

3. Defective Pricing. Defective pricing actions were not processed in an accurate and timely manner. Specifically, two of the four cases reviewed were not properly administered. These included a \$2.5 million deobligation outstanding since 1985, and a \$678,000 defective pricing case outstanding since 1985. Specifically:

a. Outstanding Deobligation. During 1985, the contractor agreed to a \$2.5 million reduction on the Inertial Upper Stage (IUS) contract (-0040) to resolve a defective pricing action. However, management initially chose not to deobligate the funds, even though required, because they believed the contract was too near closure for any effective result. However, because of the complexity of this contract, encompassing 8 1/2 years and 719 modifications with major restructures, final closure action is not in the near future.

b. Unresolved Defective Pricing Action. In the second case, the contractor requested an offset to the entire \$678,556 defective pricing claim with an unsettled price increase adjustment of \$683,820. The delay occurred because suspense procedures for resolving the defective case had not been implemented.

Accurate deobligation actions are required to ensure contract obligation authority is correct and not exceeded. Immediately following discussions with management of these conditions, action was taken to deobligate the \$2.5 million, resolve the \$678,556 defective pricing case, and implement suspense procedures. No further recommendation is required.

UNDEFINITIZED CONTRACTUAL ACTIONSBACKGROUND

1. Air Force FAR Supplement, Subpart 17.9, Undefinitized Contractual Actions, defines change orders, provisioned items ordered, and letter contracts as part of undefinitized contractual actions. Provisioned items are support-type items (for example, spares, repair parts and special support equipment) ordered through provisioning procedures to support the Inertial Upper Stage (IUS) hardware prior to production. A letter contract is a written preliminary contractual instrument authorizing immediate commencement to manufacture supplies or perform services. The use of an undefinitized contractual action must be limited to unique situations requiring immediate action to meet mission requirements. Undefinitized contractual actions may be used only when approved in accordance with contracting activity procedures. Managers shall take action to control the use of undefinitized contractual actions and ensure timely definitization within 180 days. Without definitization, the Government does not establish optimum cost controls over the contract or provide incentives for the most economical performance.

SCOPE

2. Our objective was to determine whether undefinitized contractual actions were definitized in a timely manner. Specifically, we selected 69 change orders with a not-to-exceed value of \$107.9 million. Additionally, we reviewed all provisioned items ordered (nine) valued at \$5.1 million and a letter contract valued at \$138.6 million.

FINDING

3. Undefinitized Contractual Actions. Procurement actions were not definitized in a timely manner. Specifically, 30 of 69 change orders reviewed exceeded the 6-month definitization period. Additionally, based on Acquisition Management Information System (AMIS) data, provisioned items of \$1.5 million averaged 3.4 years to definitize and another \$3.5 million remained undefinitized since 1980. Furthermore, a \$138.6 million letter contract was undefinitized for over 1 year. Specifically:

a. Change Orders. From a review of 69 undefinitized change orders that occurred between March 1979 and January 1986, 30 (\$64.2 million) were not definitized within the required time frames. The undefinitized periods varied from 189 to 375 days. For example, it took 375 days to definitize modification 362.

b. Provisioned Items. All nine contract provisioned items ordered (\$5.1 million) exceeded definitized time requirements. For example, order PK0005 required 3 1/2 years to definitize. Also, at audit conclusion, provisioned items costing \$3.5 million had not been definitized in the AMIS. The undefinitized items were still open because standby costs related to a stop work notice, issued in March 1980, had not been determined.



c. Letter Contract. A letter contract valued at \$138.6 million also exceeded the criterion for definitization by over 1 year. The delay occurred because the letter contract was not properly identified as an undefinitized contractual action and 29 contract modifications to the letter contract were issued between 1980 and 1983.

The excess time periods occurred, in part, because existing internal controls had not been implemented to suspense and track definitization, and AMIS was not used as a management tool to identify undefinitized orders. Timely negotiation of undefinitized contractual actions is essential for maximum cost control and resolution of contractor claims. The current procurement contracting officer (PCO) and related staff had implemented actions to definitize change orders and letter contracts in a timely manner. No further recommendation for these two areas is required.

#### RECOMMENDATION 3

4. The IUS Chief of Contracting should take action to resolve the \$3.5 million of provisioned items ordered undefinitized within AMIS since 1980.

#### MANAGEMENT COMMENTS

5. The Space Division Chief of Staff concurred with the finding and recommendation and stated: "Concur. Contractor is in the process of obtaining files relative to the undefinitized provisioned item orders. Upon completion of the above, files will be reviewed and action will be taken to definitize the provisioned item orders in conjunction with reconciliation of the FSD contract, scheduled for completion by 31 March 1988."

#### EVALUATION OF MANAGEMENT COMMENTS

6. Management's comments and actions planned (paragraph 5) are responsive to the finding and recommendation discussed in this TAB. Although the completion date cited in management's comments exceeds the 180-day standard for definitization of contractual actions, early completion is not possible. Since we issued our draft report, management has begun the required definitization action. However, because of the age of these items, management stated that records have been lost, some items require legal action, and others will require extensive negotiation. These circumstances have occurred because of the age of open items and even a determined management effort will result in a long definitization period.

## RECONCILIATION OF CONTRACT VALUES

MOD No	Contract Modification Document	AMIS	Contractor	Difference (AMIS Overstated)	Cause
-----	-----	-----	-----	-----	-----
A011	0	1148	-	(1148)	2
A030	0	(782,597)	-	782,597	2
148	0	5,000,000	-	(5,000,000)	6
287	0	21,864,515	-	(21,864,515)	4
274/319	232,581	232,581	218,418	14,163*	7
265/322	33,476	33,476	31,434	2042*	7
335	52,000	52,000	48,915	3085*	7
269/340	1,148,387	1,221,913	1,148,387	(73,526)	1
261/348	35,756	35,756	33,616	2140*	7
362/	(4,623,547)	(17,245,287)	9,320,481	12,621,740	3
Various					
361/455	287,085	392,158	287,085	(105,073)	3
380/491	2,043,666	2,293,666	2,043,666	(250,000)	3
519	0	15,000,000	-	(15,000,000)	5
524	0	5,000,000	-	(5,000,000)	5
595	70,389	255,535	70,389	(185,146)	1
605	(17,208)	(17,208)	-	(17,208)*	7
694	301,201	301,201	-	301,201*	7
688/701	33,049	33,049	32,485	564*	7

	Net Amount
CAUSE No. 1: Errors in inputting data into AMIS. Net Overstatement:	(\$258,672)
	=====
CAUSE No. 2: Per text of contract modification no effect on contract value.	\$781,449
CAUSE No. 3: Contract value erroneously computed on contract modification.	\$12,266,667
CAUSE No. 4: Per text of contract modification increase in estimated cost only.	(\$21,864,515)
CAUSE No. 5: Prepaid incentive fees conditional on performance factors thus not part of contract value until earned.	(\$20,000,000)
CAUSE No. 6: Contract modification corrected but not AMIS.	(\$5,000,000)
	=====
	Net Overstatement: (\$33,816,399)
	=====
*CAUSE NO. 7: Contractor report not accurately recorded. Net Understatement:	\$305,987
	=====

## RECONCILIATION OF OBLIGATION AMOUNTS

MOD No -----	OBLIGATION PER MOD -----	AFCMD HISTORICAL RECORD -----	VARIANCE -----
P00164	\$ 6,700,000	-0-	6,700,000
P00141	6,700,000	-0-	6,700,000
P00318	6,830,487	-0-	6,830,487
P00300	4,074,984	-0-	4,074,984
P00300	4,149,500	-0-	4,149,500
P00450	6,755,500	-0-	6,755,500
P00758	(383,597)	-0-	(383,597)
P00767	(14,480,660)	-0-	(14,480,660)
	-----	-----	-----
Net Total	\$20,346,214	-0-	\$20,346,214
	=====	=====	=====